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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/701,051

11/04/2003

Chun-Fai Cheng

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02/23/2007

FAY SHARPE LLP

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EXAMINER

PIZIALI, JEFFREY J

ART UNIT

PAPER NUMBER

2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/23/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/701,051	CHENG, CHUN-FAI	
	Examiner	Art Unit	
	Jeff Piziali	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 November 2006 and 04 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Species 1 (i.e., claims 1-7 and 9-12) in the reply filed on 27 November 2006 is acknowledged.
2. Claim 8 is withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 27 November 2006.

Drawings

3. Figures 1-5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (see Pages 1-5 of the Instant Specification, for instance). See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities: "10/036002.1" should be changed to "10/036002." (see Page 10, Line 13 of the Instant Specification)

Appropriate correction is required.

5. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-7 and 9-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. The term "thick dielectric electroluminescent display" in claim 1 is a relative term which renders the claim indefinite. The term "thick" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It would be unclear to one having ordinary skill in the art precisely what distance measurement must exist before the dielectric layers would be considered "thick," as opposed to "thin."

9. The term "conforms generally" in claim 2 is a relative term which renders the claim indefinite. The term "generally" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It would be unclear to one having ordinary skill in the art precisely to what degree the convex and concave portions must conform to negative and positive second derivatives respectively before they would be considered "generally" in conformance.

10. Claims 3-7 and 9-12 are rejected under 35 U.S.C. 112, second paragraph, as being dependent upon a rejected base claim.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-7 and 9-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Stewart et al (US 6,417,825 B1).

Regarding claim 1, Stewart discloses a gray scale reference voltage generator for connection to column drivers [Fig. 2; 126] of a thick dielectric electroluminescent display [Fig. 2; 200] (see Column 1, Lines 25-35), comprising: a counter [Fig. 2; 124] for receiving gray level

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data from an incoming video signal and in response counting for a time interval proportional to said gray level data; and a non linear voltage ramp [Fig. 2; 204] connected to said counter for generating a ramping voltage for application to said column drivers during said time interval (see Column 5, Line 47 - Column 6, Line 30), wherein said ramping voltage conforms to a curve having an inverted s-shape (see Figs. 4a-4e), with an initial convex portion followed by a concave portion so as to compensate for luminance versus voltage characteristics of said thick dielectric electroluminescent display (see Column 6, Line 54 - Column 7, Line 21).

Regarding claim 2, Stewart discloses said initial convex portion conforms generally to a negative second derivative with respect to said time interval, and said concave portion conforms generally to a positive second derivative with respect to said time interval (see Figs. 4a-4e; Column 6, Line 54 - Column 7, Line 21).

Regarding claim 3, Stewart discloses said counter is an 8-bit counter for delineating said time interval to fully define 256 gray levels (see Column 10, Line 62 - Column 11, Line 5).

Regarding claim 4, Stewart discloses said ramping voltage for a negative row voltage is $V_{g \text{ neg}}(t_m - t)$ expressed as a function of the difference between the time t_m for the ramping voltage to reach a maximum luminance voltage value V_m at the end of said time interval, and said ramping voltage for a positive row voltage is $V_{g \text{ pos.}}(t)$, where $V_{g \text{ pos.}}(t) = V_m - V_{g \text{ neg}}(t_m - t)$ (see Figs. 3a-3d; Column 6, Lines 4-60).

Regarding claim 5, Stewart discloses said non-linear voltage ramp further comprises an integrator circuit [Fig. 8; 432a-432e] and at least two current sources [Fig. 8; 404, 406, 408, 410, 412] for generating and applying different currents to said integrator circuit such that when a first one of said current sources is connected to said integrator circuit a first segment of said ramping voltage is generated, when both of said current sources are connected in parallel to said integrator circuit a second segment of said ramping voltage is generated, and when the second one of said current sources is connected to said integrator circuit a final segment of said ramping voltage is generated (see Figs. 8 and 10a-10b; Column 7, Line 42 - Column 8, Line 18).

Regarding claim 6, Stewart discloses said first one of said current sources generates a current that decreases during said time interval, and said second one of said current sources generates a current that increases during said time interval (see 10a-10b; Column 7, Line 42 - Column 8, Line 18).

Regarding claim 7, Stewart discloses said at least two current sources are time-dependent voltage feedback controlled current sources (see Column 7, Line 42 - Column 8, Line 36).

Regarding claim 9, Stewart discloses said non-linear voltage ramp further comprises a threshold control circuit for controlled switching between said two current sources (see Column 6, Lines 30-53 and Column 11, Lines 49-63).

Regarding claim 10, Stewart discloses said non-linear voltage ramp further comprises a frame polarity control circuit for to select between said ramping voltage for a positive row voltage and said ramping voltage for a negative row voltage (see Figs. 3a-3d; Column 6, Lines 4-60).

Regarding claim 11, Stewart discloses said current sources further include control inputs for controlling curvature of said first and second segments respectively (see Figs. 4a-4e; Column 6, Line 54 - Column 7, Line 21).

Regarding claim 12, Stewart discloses said threshold control circuit further includes a control input for setting a transition voltage between said first and second segments of said ramping voltage (see Figs. 4a-4e; Column 6, Line 54 - Column 7, Line 21).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yamazaki et al (US 6,995,753 B2), Cheng (US 6,819,308 B2), Hiroki (US 6,535,207 B1), Kimura et al (US 6,518,962 B2), Cheng (US 6,448,950 B1), Naito et al (US 6,297,791 B1), Yamada et al (US 5,990,629 A), Hino (US 5,956,015 A), and Foley et al (US 5,510,851 A) are cited to further evidence the state of the art pertaining to gray scale reference voltage generators.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Jeff Piziali', is written over a horizontal line.

Jeff Piziali
20 February 2007